

REMARKS

Claims 1-13 are pending. Reconsideration and allowance of claim 1-13 are respectfully requested in view of the following remarks.

In the Office Action dated April 27, 2005, claims 11 and 12 were rejected as being anticipated by Kellerman et al. (US 2005/0041364). Applicants respectfully traverse this rejection.

Claim 11 recites an article support structure for a lithographic apparatus that includes, *inter alia*, a plurality of supporting protrusions that define a support zone and provide a plane of support to support an article. The support zone is surrounded by a boundary having a reduced height relative to the plane of support so that the flow of backfill gas is permitted to exit the support zone, as recited by claim 11.

No where does Kellerman et al. disclose or suggest – at least - that the boundary of the support zone has a reduced height relative to the plane of support so that the flow of backfill gas is permitted to exit the support zone. Instead, Kellerman et al. teaches away from such an arrangement. For example, at [0041], Kellerman et al. teaches that leakage of cooling gas at the perimeter of the wafer typically causes a gas flow, which is a “problem.” Kellerman et al. further explain that one of the protrusions comprises a ring (153) which is generally coaxial with the substrate (105). (Kellerman et al. at [0062], FIGs. 2 and 8.) The ring (153) is operable to generally enclose an inner portion (154) of the substrate (105) and the clamping plate (115), generally forming a seal between the inner portion (154) and the environment. (Kellerman et al. at [0062], FIGs. 2 and 8.)

Accordingly, because Kellerman et al. does not teach or suggest all of the features of claim 11, Applicants respectfully submit that claim 11, and claim 12 that depends from claim 11 are patentable over Kellerman et al., and respectfully request that the rejection to claims 11 and 12 be withdrawn.

In the Office Action, Claims 1-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Empel et al. (EP 0947884) in view of Kellerman et al. (US 2005/0041364). Applicants respectfully traverse this rejection.

Claim 1 recites a lithographic apparatus that includes, *inter alia*, a backfill gas feed arranged in the support zone to provide a backfill gas that flows to a backside of the article when supported by the article support structure, the support zone being surrounded by a boundary having a reduced height relative to the plane of support so that the flow of the backfill gas is permitted to exit the support zone.

Van Empel et al. teaches the use of a substrate holder with a plate (2) that has a face (4) with a distributed plurality of apertures (10) that extend through the plate (2), and a wall (8) that protrudes from the face (4). The height (h) of the wall (8) is less than the height (H) of the protrusions (6). (Van Empel et al. at col. 1, lns. 17-24, FIG. 2.) The apertures (10) allow the area enclosed by the wall (8) to be connected to a vacuum pump. (Van Empel et al. at col. 6, ln. 56 – col. 7, ln. 12.) As conceded by the Examiner, no where does Van Empel et al. disclose or suggest a backfill gas feed arranged in the support zone to provide a backfill gas that flows to a backside of the article when supported by the article support structure, as recited in Claim 1.

Kellerman et al. is discussed above. Because Kellerman et al. expressly teaches away from having an arrangement by which the gas would be allowed to escape at the periphery of the wafer, there would be no motivation to combine a backfill gas feed as taught by Kellerman et al. into the lithographic apparatus of Van Empel et al. because the substrate holder of Van Empel et al. includes a wall (8) with a height that is less than the height of the protrusions (6) of the holder. As such, the Examiner has not met the burden of establishing a *prima facie* case of obviousness. (See MPEP §2143.)

Accordingly, Applicants respectfully submit that claim 1, and claims 2-10 that depend therefrom, are patentable over Van Empel et al. in view of Kellerman et al. and respectfully request that the rejection to claims 1-10 be withdrawn.

Claim 11 is discussed above. The teachings of Van Empel et al. and Kellerman et al. are described above. Because there is no motivation to combine the gas flow of Kellerman et al. with the apparatus of Van Empel et al., a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully submit that claim 11 and claim 12 that depends from claim 11 are patentable over Van Empel et al. in view of Kellerman et al. and respectfully request that the rejection to claims 11 and 12 be withdrawn.

Claim 13 recites a lithographic apparatus that includes, *inter alia*, means for providing a flow of backfill gas in the support zone for providing improved thermal conduction between the article and means for supporting the article, and means for surrounding the support zone so that the flow of the backfill gas is permitted to exit the support zone.

The teachings of Van Empel et al. and Kellerman et al. are described above. There is simply no motivation to combine the backfill gas of Kellerman et al. with the apparatus of Van Empel et al. when Kellerman et al. expressly teaches away from the arrangement provided by Van Empel et al. Accordingly, Applicants respectfully submit that Claim 13 is patentable over

Van Empel et al. in view of Kellerman et al. and respectfully request that the rejection to Claim 13 be withdrawn.

All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains at issue which the Examiner feels may best be resolved through a personal or telephone interview, please contact the undersigned at the telephone number below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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